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10/771,474

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Jin-Soo Park

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EXAMINER

SAFAIPOUR, BOBBAK

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

10/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/771,474	<b>Applicant(s)</b> PARK ET AL.	
	<b>Examiner</b> BOBBAK SAFAIPOUR	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/17/2008 has been entered.

### ***Response to Arguments***

Applicant's arguments have been fully considered but they are not persuasive.

In the present application, Applicant has amended the independent claims which set forth that each of the plurality of multiplexed bits are allocated to one of sixteen slots of the reverse frame, and that each slot comprises a single bit. The amendments also indicate that the bits are allocated via a multiplexer. Thus, each slot of the reverse frame contains a single multiplexed bit indicating a reception state of either the first information on the first channel or the second information on the second channel. Applicant argues that none of the cited references disclose the amended limitations.

The Examiner respectfully disagrees. Li clearly discloses a fundamental power control sub-channel and a supplemental power control sub-channel that are time multiplexed on a reverse pilot channel (abstract; read as each slot of the reverse frame contains a single multiplexed bit). Taking a closer look at figure 3, Li discloses in the reverse pilot channel, the pilot and power control bits are transmitted over 20 ms time intervals or frames. Each frame of

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the reverse pilot channel comprises sixteen 1.25 ms time intervals (read as one of sixteen slots of the reverse frame) referred to herein as power control sub-frames over which a power control group is transmitted, wherein each pilot control sub-frame comprises four sub-channels and each power control group comprises four bits representing a pilot and power control. In each sub-channel, a single bit may be transmitted (read as each slot comprises a single bit), wherein each bit comprises  $384XN$  symbols and  $N$  represents a chip rate. (figure 3; col. 3, lines 12-26)

It has been shown that the amended claims are taught in the Li reference. If the Applicant intends to differentiate between the Li reference and the present application, then such differences should be made explicit in the claims. As a result, the argued features are written such that they read upon the cited references; therefore, the previous rejection still applies.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li et al. (US 6,590,873 B1; hereinafter Li)** in view of **Lin et al. (US 6,249,894; hereinafter Lin)**.

Consider **claim 1**, Li discloses a method of reporting reception states of a reverse link comprising a plurality of channels, wherein the pilot and power control bits are transmitted over 20 ms time intervals (col. 3, lines 12-25) from a base station in a mobile station, comprising the steps of: allocating each of a plurality of multiplexed bits indicating a reception states to one of sixteen slots of a reverse frame via a multiplexer, wherein each slot comprises a single bit (col. 3, lines 11-65; each frame of the reverse pilot channel comprises sixteen 1.25 ms power control sub-frames over which a power control group is transmitted, wherein each pilot control group comprises four bits representing a pilot and power control); and transmitting the reverse frame (col. 3, lines 11-65).

Li fails to specifically disclose reception states of first information received on a first traffic channel and second information received on a second traffic channel, wherein reception

state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis.

In related Lin discloses reception states of first information (read as received frame erasure) received on a first traffic channel and second information (read as erasure EIB) received on a second traffic channel, wherein reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis. (figure 2; col. 3, line 20 to col. 4, line 27)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Lin into the teachings of Li to determine if the forward traffic channel message should be resent.

Consider **claim 6**, Li discloses a method of controlling transmission power of traffic channels in a base station which transmits pilot and power control bits are transmitted in a reverse link over 20 ms time intervals (col. 3, lines 12-25) to a mobile station, comprising the steps of: receiving a reverse frame comprising a plurality of multiplexed reception state indicating bits, wherein the reverse frame comprises sixteen slots and each slot comprises a single bit (col. 3, lines 11-65); separating the reception state indicating bits from the reverse frame (col. 3, lines 11-65; each frame of the reverse pilot channel comprises sixteen 1.25 ms power control sub-frames over which a power control group is transmitted, wherein each pilot control group comprises four bits representing a pilot and power control), and performing a power control on traffic channels (col. 3, lines 11-65), wherein the reception state are reception result indicator bits for power control on a frame basis (col. 3, lines 11-65).

Li fails to specifically disclose reception states of first information received on a first traffic channel and second information received on a second traffic channel, wherein reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis.

In related Lin discloses reception states of first information (read as received frame erasure) received on a first traffic channel and second information (read as erasure EIB) received on a second traffic channel, wherein reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis. (figure 2; col. 3, line 20 to col. 4, line 27)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Lin into the teachings of Li to determine if the forward traffic channel message should be resent.

Consider **claim 2**, and **as applied to claim 1 above**, Li, as modified by Lin, discloses the claimed invention wherein the plurality of multiplexed reception state indicating bits of the first and second information are alternatively allocated. (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 3**, and **as applied to claim 1 above**, Li, as modified by Lin, discloses the claimed invention wherein the reverse frame is a pilot channel frame. (Li: figure 3; col. 3, lines 11-65; Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 4**, and **as applied to claim 1 above**, Li, as modified by Lin, discloses the claimed invention wherein each of the plurality of the plurality of multiplexed reception state indicating bits of the first and second information are comprise at least one of a Quality Indicator Bit (QIB) and an Erasure Indicator Bit (EIB). (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 5**, and **as applied to claim 1 above**, Li, as modified by Lin, discloses the claimed invention except for wherein the plurality of multiplexed reception state indicating bits of the second information are transmitted at a 50 bps data rate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bits transmitted at 50 bps for high rate power control, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Consider **claim 7**, and **as applied to claim 6 above**, Li, as modified by Lin, discloses the claimed invention wherein the plurality of multiplexed reception state indicating bits of the first and second information are alternatively allocated. (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 8**, and **as applied to claim 6 above**, Li, as modified by Lin, discloses the claimed invention wherein the reverse frame is a pilot channel frame. (Li: figure 3; col. 3, lines 11-65; Lin: figure 2; col. 3, line 20 to col. 4, line 27)



Consider **claim 9**, and **as applied to claim 6 above**, Li, as modified by Lin, discloses the claimed invention wherein each of the plurality of the plurality of multiplexed reception state indicating bits of the first and second information are comprise at least one of a Quality Indicator Bit (QIB) and an Erasure Indicator Bit (EIB). (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 10**, and **as applied to claim 6 above**, Li, as modified by Lin, discloses the claimed invention except for wherein the plurality of multiplexed reception state indicating bits of the second information are transmitted at a 50 bps data rate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bits transmitted at 50 bps for high rate power control, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**Claims 11-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li et al.** (US 6,590,873 B1; hereinafter **Li**) in view of **Lin et al.** (US 6,249,894; hereinafter **Lin**) and in further view of **Kwon et al.** (US 6,151,328; hereinafter **Kwon**)

Consider **claim 11**, Li discloses a mobile station for receiving information from a base station (figure 1; col. 2, line 66 to col. 3 line 11; forward link) and reporting reception results information to the base station (figure 1; col. 2, line 66 to col. 3 line 11), comprising: indicating bits of the information (col. 3, lines 11-65); allocating the reception state indicating bits in slots of a reverse frame, wherein the reverse frame comprises sixteen slots and each slot comprises a

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single reception state indicating bit (col. 3, lines 11-65; each frame of the reverse pilot channel comprises sixteen 1.25 ms power control sub-frames over which a power control group is transmitted, wherein each pilot control group comprises four bits representing a pilot and power control).

Li fails to specifically disclose a first MUX for multiplexing reception state indicating bits of the first and the second information; and a second MUX for sequentially allocating the multiplexed the reception state indicating bits of the first and the second information.

In related art, Lin discloses reception states of first information (read as received frame erasure) received on a first traffic channel and second information (read as erasure EIB) received on a second traffic channel, wherein reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis. (figure 2; col. 3, line 20 to col. 4, line 27)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Lin into the teachings of Li to determine if the forward traffic channel message should be resent.

Furthermore, in related art, Kwon discloses first and second multiplexers. (col. 7, lines 13 to 47; col. 12, lines 13-19, 57-65; and col. 13, lines 13-22)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Kwon into the teachings of Li and Lin to control power in a CDMA system which is capable of performing a power control operating in consideration of different environments.

Consider **claim 17**, Li discloses a base station for transmitting to a mobile station and receiving the reception results of the information from the mobile station (figure 1; col. 3, lines 11-65; reverse link), comprising: receiving a reverse frame comprising sixteen slots including a plurality of slots, wherein each slot comprises a single reception state indicating bit and for separating reception state indicating bits from the reverse frame (figure 1; col. 3, lines 11-65; each frame of the reverse pilot channel comprises sixteen 1.25 ms power control sub-frames over which a power control group is transmitted, wherein each pilot control group comprises four bits representing a pilot and power control).

Li fails to specifically disclose a first demultiplexer (DEMUX) for receiving a reverse frame including a plurality of slots and for separating reception state indicating bits of the first and the second information multiplexed by the mobile station from the reverse frame; and a second DEMUX for demultiplexing the multiplexed reception state indicating bits into the reception state indicating bits of the first information and the reception state indicating bits of the second information.

In related art, Lin discloses reception states of first information (read as received frame erasure) received on a first traffic channel and second information (read as erasure EIB) received on a second traffic channel, wherein reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis. (figure 2; col. 3, line 20 to col. 4, line 27)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Lin into the teachings of Li to determine if the forward traffic channel message should be resent.

Furthermore, in related art, Kwon discloses first and second demultiplexers. (col. 1, lines 41-51; col. 4, lines 7-23; col. 8, lines 45-52; and col. 9, lines 13-17 and 45-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Kwon into the teachings of Li and Lin to control power in a CDMA system which is capable of performing a power control operating in consideration of different environments.

Consider **claim 12**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the first MUX allocates a first predetermined number of successive reception state indicating bits of the first information, each bit being allocated to a successive leading slot, and a second predetermined number of successive reception state indicating bits of the second information, each bit being allocated to a successive trailing slot, the trailing slots following the leading slots for the first information. (Kwon: col. 7, lines 13 to 47; col. 12, lines 13-19, 57-65; and col. 13, lines 13-22; Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 13**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the reception state indicating bits of the first and second information are reception result indicator bits for power control on a frame basis. (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 14**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the reverse frame is a pilot channel frame. (Li: figure 3; col. 3, lines 11-65; Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 15**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein each of the plurality of the plurality of multiplexed reception state indicating bits of the first and second information are comprise at least one of a Quality Indicator Bit (QIB) and an Erasure Indicator Bit (EIB). (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 16**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention except for wherein the reception state indicating bits of the first information and the reception state indicating bits of the second information are transmitted at a 50 bps data rate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bits transmitted at 50 bps for high rate power control, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Consider **claim 18**, and **as applied to claim 17 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the multiplexed reception state indicating bits of the first information are arranged in consecutive leading slots of the reverse frame and the multiplexed reception state indicating bits of the second information are arranged in trailing consecutive slots

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following the leading slots. (Kwon: col. 7, lines 13 to 47; col. 12, lines 13-19, 57-65; and col. 13, lines 13-22; Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 19**, and **as applied to claim 17 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the reception state indicating bits of the first and the second information are reception result indicator bits for power control on a frame basis. (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 20**, and **as applied to claim 17 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein the reverse frame is a pilot channel frame. (Li: figure 3; col. 3, lines 11-65; Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 21**, and **as applied to claim 17 above**, Li, as modified by Lin and Kwon, discloses the claimed invention wherein each of the plurality of the plurality of multiplexed reception state indicating bits of the first and second information are comprise at least one of a Quality Indicator Bit (QIB) and an Erasure Indicator Bit (EIB). (Lin: figure 2; col. 3, line 20 to col. 4, line 27)

Consider **claim 22**, and **as applied to claim 11 above**, Li, as modified by Lin and Kwon, discloses the claimed invention except for wherein the reception state indicating bits of the first information and the reception state indicating bits of the second information are transmitted at a 50 bps data rate. It would have been obvious to one having ordinary skill in the art at the time

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the invention was made to have the bits transmitted at 50 bps for high rate power control, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Conclusion***

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipoor whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Bobbak Safaipoor/  
Examiner, Art Unit 2618

October 14, 2008

/Matthew D. Anderson/

Supervisory Patent Examiner, Art Unit 2618